Claims:

1. A charged particle beam device (1) to inspect or structure a specimen (3) comprising:

a) a charged particle beam source (5) to generate a charged particle beam (7);

b) a beam optical system (16) to direct the charged particle beam (7) onto said specimen (3); and

c) a gas supply system (10) providing a gas (12) for the charged particle beam device (1);

the gas supply system (10) comprising a plurality of at least ten tubes (14; 15; 22) to direct said gas (12) towards a desired region (68) for interaction with the specimen (3).

2. The charged particle beam device (1) according to claim 1, whereby the length, L, of each tube (14) is larger than the square root of the inner cross section area, A, of the tube by more than 5 times, preferably by more than 50 times and even more preferred by more than 500 times.

3. The charged particle beam device (1) according to claim 1 or 2, whereby the gas supply system (10) comprises a plurality of more than 100, preferably more than 1000 and even more preferred more than 10,000 tubes (14; 15; 22) to direct said gas (12).

4. The charged particle beam device (1) according to any of the previous claims, whereby

the desired region (68) is the volume taken by the charged particle beam (7) and/or the region where the charged particle beam (7) impinges onto the specimen (3).

5. The charged particle beam device (1) according to any of the previous claims, whereby

the charged particle beam device (1) provides a vacuum (38) with a pressure lower than $1x10^{-3}$ mbar and preferably lower than $1x10^{-4}$ mbar.

6. The charged particle beam device (1) according to any of the previous claims, whereby the inner cross section area, A, of each tube (14) varies along the tube length, L, by less than a factor of 4, preferably by less than 20% and even more preferred by less than 10% compared to the cross section area, A, at the outlet (32) of the tube (14).

7. The charged particle beam device (1) according to any of the previous claims, whereby the inner cross section area, A, at the outlet (32) of each tube (14) of the plurality of tubes (15; 22) is smaller than 50,000 μm^2, preferably smaller than 1000 μm^2 and even more preferred smaller than 10 μm^2.

8. The charged particle beam device (1) according to any of the previous claims, whereby the inlets (34) of the tubes (14) are positioned within a dispensing pressure chamber (13) and preferably within a common dispensing pressure chamber (13).

9. The charged particle beam device (1) according to any of the previous claims, whereby the at least ten tubes (14) are oriented essentially in parallel to each other.

10. The charged particle beam device (1) according to any of the previous claims, whereby the tubes (14) of the plurality of tubes (15; 22) are arranged as a bundle of tubes.

11. The charged particle beam device (1) according to claim 10,

whereby the bundle of tubes form a tube plate (22) with the tubes (14) reaching from the front side (24) of the tube plate (22) to the reverse side (26) of the tube plate.

12. The charged particle beam device (1) according to claim 11,

whereby the density of tube outlets (32) on the reverse side (26) of the tube plate is within the range of 10^2 1/cm^2 to 10^7 1/cm^2 and preferably within the range of 10^4 1/cm^2 to 10^6 1/cm^2.

13. The charged particle beam device according to any of the previous claims, whereby the inner cross section, A, of each tube (14) of the plurality of tubes (15; 22) is characterized by a characteristic diameter, D.

14. The charged particle beam device according to claim 13,

whereby, during normal operation, the free path length (30) of the gas (12) at the outlet (32) of each tube (14) is larger than 1/10 of the length of the tube, L, preferably larger than one time the length of the tube, L, and even more preferred larger than ten times the length of the tube, L.

15. The charged particle beam device (1) according to any of the previous claims, whereby, during normal operation, the peaking-ratio of the gas (12) at the outlet of each tube (32) of the plurality of tubes (15; 22) is larger than two, preferably larger than five and even more preferred larger than 20.

16. The charged particle beam device (1) according to any of the previous claims, whereby, during normal operation, the pressure at the inlet (36) of each tube (14) is smaller than 10 mbar, preferably smaller than 1 mbar and even more preferred smaller than 0,1 mbar.

17. The charged particle beam device (1) according to any of the previous claims, whereby the beam optical system (16) comprises a final focus lens (18) to focus the charged particle beam (7) onto the specimen (3).

18. The charged particle beam device (1) according to claim 17, whereby, during normal operation, the plurality of tubes (15; 22) directs the gas (12) into the charged particle beam (7) in the region between the final focus lens (18) and the surface of the specimen (3).

19. The charged particle beam device (1) according to any of the claims 17 or 18, whereby the tubes (14) of the plurality of tubes (15; 22) are arranged at an angle, α, smaller than 60 degrees, preferably smaller than 40 degrees, and even more preferred smaller than 20 degrees with respect to the optical axis (52) of the final focus lens to direct the gas (12) towards the specimen (3).

20. The charged particle beam device (1) according to any of the previous claims, whereby the beam optical system (16) comprises a reference electrode (56) to generate an electric field to accelerate the ionized gas (12) towards the specimen (3).

21. The charged particle beam device (1) according to any of the claims 11 to 20, whereby the plurality of tubes (15) comprises at least two tube plates (22) and preferably at least eight tube plates (22).

22. The charged particle beam device (1) according to claim 21, whereby the at least two tube plates (22) are arranged as a semicircle around the optical axis of the final focus lens (52).

23. The charged particle beam device (1) according to any of the previous claims, whereby the gas (12) is a neutral gas when passing through the tubes (14).

24. The charged particle beam device (1) according to claim 23, whereby the neutral gas (12) is a neutral gas like N2 or an inert gas like He, Ne, Ar; Kr, Xe, or CH_4 or a mixture of the above mentioned gases.

25. The charged particle beam device (1) according to any of the previous claims, whereby the at least ten tubes (14; 15; 22) are positioned in the vicinity of the specimen (3).